

Daily Reciprocity and Well-being: A Diary Study of Intergenerational Support between
Mothers and Adult Children during the COVID-19 Pandemic

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Abstract

Objectives

Intergenerational support between aging parents and adult children is important to the well-being of both groups, especially during public health emergencies. However, few previous studies have examined the effects of daily support between parents and children on their well-being during public health emergencies. To fill in this gap, we examined the association between daily support and well-being in mothers and their adult children during the COVID-19 pandemic.

Methods

Seventy-seven pairs of mothers (aged 44–80 years, $M = 53.78$, $SD = 9.57$) and adult children (aged 18–54 years, $M = 26.61$, $SD = 9.46$; 19% male) in mainland China participated in a 14-day daily diary study during a 14-day stay-at-home period. All of the participants reported the daily emotional and instrumental support they had given to and received from their mother/child each day for 14 consecutive days. Their daily positive affect and negative affect were also measured.

Results

Receiving more support on a given day was associated with providing more support on that day, suggesting a daily reciprocity. This finding was consistent across mothers and children. A lower level of being under-benefitted on a day was associated with better daily well-being of children, but not that of mothers. Providing support, but not receiving support, was positively associated with mothers' daily well-being, whereas receiving support, but not providing support, was positively associated with children's daily well-being.

Discussion

This study provides evidence of daily intergenerational support during a global public health emergency. The findings shed light on the importance of daily reciprocity and its implications for well-being.

Keywords: intergenerational ties, daily support, reciprocity, diary study, COVID-19

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Introduction

During the Coronavirus disease (COVID-19) pandemic, individuals across the life span reported high levels of psychological distress, particularly during the period of lockdown (e.g., Losada-Baltar et al., 2020). According to socioemotional selectivity theory (Carstensen et al., 2003), individuals prioritize emotionally meaningful goals, such as staying with and receiving support from family members, when they perceive that future time is limited. Life-threatening events, such as SARS and AIDS, can induce limited future time perspective (Fung & Carstensen, 2006). The COVID-19 pandemic may be no exception. In the context of these future-time-limiting events, achieving emotionally meaningful goals may benefit well-being. Indeed, findings of recent surveys revealed that individuals who perceived a greater level of support from family and relatives reported better psychological well-being during the COVID-19 pandemic (Evandrou et al., 2020). However, few studies have examined how family members provide emotional and instrumental support to each other through daily interactions and how family emotional and instrumental support benefits well-being during these events.

Most studies on intergenerational support are based on global retrospective reports to examine support between aging parents and adult children. Such methodology may neglect less salient daily interactions (Fingerman et al., 2015). Recently, a growing number of studies have started to examine how daily support between aging parents and adult children may be associated with daily well-being (e.g., Cichy et al., 2014; Fingerman et al., 2015; Savla et al., 2008). These diary studies, however, collected responses from either parents or children, and thus could only capture half of the picture of daily interactions. To the best of our knowledge, few studies have examined the dynamic process of daily support between parents and children by collecting daily responses from both parties simultaneously and none has been conducted in the context of a public health emergency. In addition, previous studies on

intergenerational support did not control for confounding factors that may be associated with daily intergenerational interaction, such as individual and age-related differences in daily activities. To this end, the lockdown period implemented during the COVID-19 pandemic may have reduced these confounding factors (e.g., reducing the range of activities that individuals can engage in), allowing us to better test our research questions.

In the area of social interaction, reciprocity is considered an optimal condition for promoting well-being of both partners (Antonucci & Jackson, 1990). Most global retrospective surveys have examined reciprocity in the context of long-term exchanges, such as the conditions under which adult children may best support aging and frail parents from whom they have received support and care. Long-term reciprocity is important in parent–child relationships because such relationships often last for years. However, whether daily support between parents and children also tends to be reciprocal, and more importantly, the implications of daily reciprocity in intergenerational exchanges on daily well-being remain understudied. Such understanding may be particularly important in the setting of a crisis that significantly highlights emotionally meaningful goals. We examined these questions during the COVID-19 pandemic by collecting data from both mothers and adult children in a 14-day daily diary study.

Intergenerational Reciprocity

In the context of interpersonal relationships, “reciprocity” refers to an equal or comparable exchange of care, emotional affection, and instrumental support (Wan & Antonucci, 2016). According to equity theory (Hatfield & Sprecher, 1983), reciprocity in receiving and providing support, but not the maximization of received support, promotes well-being. This theory has been supported by a large number of empirical studies (e.g., Fuhrer & Jackson, 1990; Liang et al., 2001). Due to the long-lasting nature of parent–child

relationships, much more attention has been given to long-term than to short-term reciprocity (Leopold & Raab, 2011).

Most studies have focused on parents' roles as caregivers when their children are young and as care receivers when their children are adults, and have considered this exchange of roles as a case of reciprocity. However, Leopold and Raab (2011) distinguished short-term reciprocity from long-term reciprocity in parent–child relationships. Unlike long-term reciprocity in which repayment for an investment can happen much later in a person's lifetime, short-term reciprocity involves giving and receiving concurrently or over a relatively short period. When either partner in a relationship has consistently served in a single role (as the receiver or provider of support) for a long time, both giving and receiving support can be unpleasant (Leopold & Raab, 2011). Aging parents who always receive support may begin to feel dependent and thus lose self-efficacy and self-esteem (Maisel & Gable, 2009), whereas adult children who always provide support may come to feel obligated and stressed.

Short-term reciprocal behaviors can enable aging parents to display autonomy and adult children to experience relief from the stress of providing long-term care. This argument has been supported by the findings of a cross-sectional survey conducted across 12 countries, in which parents were found to give more financial support to children who had helped them more over the past year (Leopold & Raab, 2011). Similarly, in a survey of 1,103 community dwelling older adults aged 65 years and above, Liang and colleagues (2001) asked about the general interpersonal exchange (giving and receiving) in which the participants had engaged in the past year. They found a positive association between providing and receiving support in the past year (Liang et al., 2001). However, these studies examined reciprocity in a 1-year window; there is limited evidence of whether daily interactions between aging parents and adult children may also be reciprocal. Emergencies and unexpected health crises, such as the SARS outbreak of 2002–2004, have been found to significantly shorten individuals'

perceptions of future time (Fung & Carstensen, 2006). The COVID-19 pandemic is likely to have a similar effect. As long-term reciprocity needs a long timeframe to complete, short-term reciprocity may be particularly important when individuals perceive future time as limited. In this study, we examined daily reciprocity and its implications on well-being when aging parents and adult children stayed at home for 14 days during the COVID-19 pandemic.

Reciprocity and Well-being

Although reciprocity is assumed to be optimal for well-being, the impact of reciprocity on well-being seems to depend on the nature of the relationship. Some studies of general social relationships have found that greater reciprocity is associated with better well-being and fewer depressive symptoms (Takizawa et al., 2006). Studies of family relationships, however, have not found significant relationships between emotional reciprocity and well-being (Antonucci & Jackson, 1990; Li et al., 2011; Perkins et al., 1990). The latter researchers have explained the nonsignificant associations by pointing out that family support may be considered obligatory, and people may be less likely to repay support given out of obligation. Thus, family roles may affect the link between reciprocity and well-being, because the responsibilities and obligations that people feel are influenced by their family roles (Stone, 1991). For example, because parents play a supporting role from children's birth, children may consider receiving support from parents as natural and thus take it for granted, but consider offering support to parents as burdensome and unnecessary (Fingerman et al., 2013; Fingerman et al., 2016). Receiving support may also be considered by aging parents to be burdensome (Liang et al., 2001). Aging parents may resist the idea of becoming a burden for children, which weakens the association between well-being and reciprocity. In contrast, downward transfers are more normative even when children are in adulthood (Arrondel & Masson, 2001; Shaw et al., 2004). Therefore, the relationship between reciprocity and well-being in parent-child relationships may differ from that in

general social exchanges. In particular, family roles may affect the association between reciprocity and well-being. The reciprocity–well-being association may be weaker in parents, who have been long-term caregivers, than in children, who might not previously have expected to play a supporting role.

Because most of the previous studies have focused on long-term reciprocity, they examined global reports of well-being as the outcome variable (e.g., Levitt et al., 1992). Global reports of well-being represent individuals' evaluations of their well-being over a relatively long period, whereas daily reports of well-being represent their evaluations of well-being on specific days (Newman et al., 2020). Thus, reports of global well-being and daily well-being may be inconsistent, because individuals' memory of experiences may be different from their actual experiences (Kahneman & Riis, 2005). Such differences may be particularly salient during a public health emergency, as individuals who are asked to recall their global well-being during this period may be more likely to recall the most salient scenarios and neglect the general daily interactions. In this study, we attempted to understand the relationship between intergenerational support and well-being at the daily level.

Providing Support, Receiving Support, and Well-being

The intergenerational stake hypothesis suggests that parents invest more in their children than vice versa (Bengtson & Kuypers, 1971). Compared to their children, parents find it more pleasant to provide support (Pollmann- Schult, 2014) because this is an anticipated form of care (Chandra et al., 2005). Parents-to-be generally expect that they will care for their child for many years. The sense of being needed and the enjoyment that accompanies the caring process enhance the well-being of parents when they provide support. However, children may not expect to provide care to their parents, and this shift in roles may elicit negative emotions. Certain duties are associated with family roles. Aging parents may perceive receiving support from their children as a sign of dependency and incompetence

(Lowenstein, 2007). Therefore, aging parents may find it less pleasant to receive support than adult children may (Lowenstein, 2007).

These arguments have been supported by empirical findings. In a study based on a national survey conducted in the United States, Thomas (2009) found that the association between providing support to social partners and well-being was stronger than that between receiving support from social partners and well-being. In another cross-national survey, Lowenstein and colleagues (2007) found that providing support increased life satisfaction, whereas receiving support reduced life satisfaction. Notably, under-benefited older adults (i.e., those who gave more support than they received) reported the highest levels of life satisfaction, whereas over-benefited older adults reported the lowest levels of life satisfaction, and those who received a balanced level of support fell in-between. In a daily diary study by Huo and colleagues (2017), older parents reported less daily negative affect on the days that they provided support to children, but reported more negative affect on the days that they received support from children. Receiving support was negatively associated with life satisfaction in older adults (Lowenstein et al., 2007). These findings suggest that for aging parents, providing support may be associated with more positive affect than receiving support may.

In addition, Davey and Eggebeen (1998) proposed the contingent exchange perspective. They argue that the context of social exchange may influence the relationship between giving and receiving support and well-being. Specifically, receiving support may be less unpleasant and more beneficial for older adults when support is needed in times of troubles. Applying this perspective to the current study, the COVID-19 pandemic might have imposed psychological distress on all individuals (Qiu et al., 2020), particularly older adults who have greater mortality risks if infected. In such a situation, support might be needed and

therefore receiving support might not be perceived as signaling dependence and thus unpleasant.

For adult children, providing support to aging parents is not always a pleasant experience (Aneshensel et al., 1995; Antonucci et al., 1998; Fingerman et al., 2013; Fingerman et al., 2016; Walen & Lachman, 2000), especially when the children lack resources and time (Savla et al., 2008) and when the parents have health problems (Bangerter et al., 2017). In a 4-day daily diary study (Bangerter et al., 2017), adult children who provided support to aging parents on a given day reported greater negative affect and higher levels of daily cortisol, indicating a higher level of stress, on the following day. In a study among caregivers of parents and caregivers of children, Hammersmith and Lin (2016) found that caregivers of parents (i.e. children) reported lower well-being than caregivers of children (i.e. parents). Previous studies have consistently found that the flow of intergenerational support is primarily downward from parents to children (de Jong Gierveld et al., 2012). Receiving support from parents has been found to be associated with greater well-being (Fingerman et al., 2012) and relationship satisfaction in adult children (Maisel & Gable, 2009).

The Current Study

Most previous studies have used global measures of support between aging parents and adult children. The daily dynamics of support between the two relationship partners and their implications on well-being have not been comprehensively examined, particularly in a setting in which contextual confounds such as activities and experiences are naturalistically controlled for. In addition, few studies have examined how family support benefits well-being during life-threatening public health events, such as the COVID-19 pandemic. To fill in these gaps, we examined daily emotional and instrumental support between mothers and adult children using the daily diary method during the COVID-19 lockdown. In particular, we

examined (a) whether daily intergenerational support was reciprocal; (b) the association between the level of being under-benefitted on a day and daily well-being; and (c) the associations between providing support, receiving support, and daily well-being. We recruited pairs of mothers and adult children in China who spent every day together during a lockdown period of 14 days in the COVID-19 outbreak. During this period, almost everyone in China was ordered to stay at home, meaning that many people spent significantly more time than usual with people they lived with. Their activities and experiences were restricted to the home environment and thus were relatively uniform. To better control for contextual confounds, we recruited mothers and adult children who lived together during the 14 days.

Based on socioemotional selectivity theory (Carstensen et al., 2003), the intergenerational stake hypothesis (Bengtson & Kuypers, 1971), the contingent exchange perspective (Davey & Eggebeen, 1998), and the findings of previous studies, we hypothesized that receiving more support from others would be associated with offering more support to others (H1a), and that this would be consistent for both the mothers and the children (H1b). We also hypothesized that a lower level of under-benefitted on a day would be associated with a greater level of daily positive affect (H2a) and a lower level of daily negative affect (H2b), and that this effect would be stronger in the children than in the mothers (H2c), as children tended to emphasize short-term reciprocity more (Davey & Norris, 1998). Receiving support and offering support would be associated with a greater level of daily positive affect (H3a) and a lower level of daily negative affect (H3b). Based on the intergenerational stake hypothesis, we expected the association between offering support and positive or negative affect to be stronger in the mothers than the children (H3c) and the association between receiving support and positive or negative affect to be stronger in the children than the mothers (H3d), because mothers usually expect to provide rather than

receive more support from their children, whereas the opposite is true for children (Davey & Eggebeen, 1998).

Design and Methods

Participants and Procedure

We collected data from 77 pairs of mothers and adult children in mainland China. The age range of the children in the sample was 18–44 years ($M = 26.61$, $SD = 9.46$), and 19% were male. The mothers were aged from 44 to 80 years ($M = 53.78$, $SD = 9.57$). The participants were recruited by sending mass mail invitations to undergraduate and postgraduate students and staff in a university. The adult students or staff either participated in the study with their mothers or invited their mothers and grandmothers to participate. The initial criteria for participation included: (a) both the adult child and mother were born and raised in mainland China; (b) they lived together while quarantined at home for 14 days; and (c) neither the child nor the mother had any major mental, physical, or cognitive health conditions. The participants were from a wide range of provinces (23 out of 32) in mainland China.

At the beginning of the study, all participants were asked to complete an online survey on their demographic information. They were then asked to complete a daily online questionnaire for 14 consecutive days. An e-mail containing the URL link to the online questionnaire was sent to the participants at around 6 pm each day to remind them to complete the daily questionnaire. The participants received another reminder e-mail if they had not completed the daily questionnaire by 12 pm the next day. The participants each received HK\$200 (approximately US\$25) upon completing all sessions and measurements. Ethical approval was obtained from the Human Research Ethics Committee of the Education University of Hong Kong. Detailed information on the sample is reported in Table 1.

Measures

Provided Support, Received Support, and the Level of Being Under-Benefitted.

A short and daily version of a previously developed measure of social exchanges (Newsom, Rook, Nishishiba, Sorkin, & Mahan, 2005) was adapted to measure daily exchanges between adult children and their mothers. The participants were asked to indicate the extent to which they provided and received support, using a 7-point Likert scale from 1 (*not at all*) to 7 (*very much*). Two items measured support provided. “Today, I gave useful suggestions to my child/mother” was used to measure informational support given to the partner, and “Today, I cheered my child/mother up or helped him/her feel better” was used to measure emotional support provided to the partner. The mean of the items was used to indicate daily support provided to the partner. The participants also indicated the extent to which they received support by rating “Today, my mother/child cared for me and was responsive to my needs.” We used the level of being under-benefitted to indicate daily reciprocity. We subtracted support received from support provided (Antonucci & Akiyama, 1987; Jou & Fukada, 2002; Jung, 1990; Ikkink & van Tilburg, 1999; Li et al., 2011) (Mothers: Range = -4.50-4.50; Children: Range = -6.00 – 4.50). A more positive score indicates a greater level of being under-benefitted.

Daily Affect. The short version of the Affect Valuation Index (Tsai, Knutson, & Fung, 2006; as used in Jiang et al., 2016) was used to assess daily affect. The participants indicated the intensity with which they had experienced each affective state on the assessment day on a 5-point Likert scale, from 1 (*not at all*) to 5 (*extremely*). Positive affect was measured by the mean of “enthusiastic,” “calm,” and “happy” (between-person reliability estimate = .93; within-person reliability estimate = .75 (Cranford et al., 2006)). Negative affect was measured by the mean of “anxious,” “dull,” and “sad” (between-person reliability estimate = .95; within-person reliability estimate = .75 (Cranford et al., 2006)).

Daily Interaction Hours. Each individual was asked to record the number of hours during which they had interacted with the other individual. The mean score of the two partners was used as the score for daily interaction.

Daily Subjective Health. The participants were asked to rate their daily subjective health on a scale from 1 (*very poor*) to 6 (*perfect*).

Demographic Information. The participants were asked to indicate their sex (0 = *male*, 1 = *female*); marital status (0 = *unmarried*, 1 = *married*); education level (0 = *below college*, 1 = *college level and above*); job status (0 = *no full-time job*, 1 = *has a full-time job*); subjective socioeconomic status (on a scale from 1 = *lowest* to 10 = *highest*) (Adler et al., 2000); religion (0 = *no religion*, 1 = *has a religion*); and overall subjective health in the last month (on a scale from 1 = *very poor* to 6 = *perfect*).

Data Analysis Overview

The analysis was carried out in three parts. In Part 1, we tested whether intergenerational support was reciprocal on a daily basis by examining the association between daily received support and provided support. In Part 2, we examined whether the level of being under-benefitted on a day was associated with daily positive and negative affect. Finally, in Part 3, we tested whether receiving support and offering support were associated with daily positive and negative affect. Due to the nature of dyadic data, we tested these questions using actor-partner interdependence models (APIM) (Cook & Kenny, 2005) via hierarchical linear modeling (Raudenbush, 2004). We adopted the two-intercept approach developed by Raudenbush, Brennan, and Barnett (1995) and Cook and Kenny (2005) to analyze the nested data using APIM. The interdependence between the child and mother in each pair was modelled by creating two dummy variables to distinguish between the two partners and the actor-versus-partner effects (Cook & Kenny, 2005; Raudenbush et al., 1995). In Part 1, support received from the partner and support offered to the partner were Level 1 independent and dependent variables, respectively. In Part 2, the level of being under-benefitted was indicated by a difference score created from subtracting support received from support provided. The

difference score was the Level 1 independent variable, and daily positive and negative affect were the Level 1 dependent variables. In Part 3, support offered to and received from the partner were the Level 1 independent variables, and daily positive and negative affect were the Level 1 dependent variables. Across all three parts, the actor's age was the Level 2 moderator. We first tested the models with no covariates, and then re-tested the models with covariates found to be associated with integrational interaction or well-being during COVID-19. Because daily interaction hours (Li & Fung, 2013), perceived socioeconomic status (Lee et al., 1994), general health (Silverstein et al., 2006), job status (Opree & Kalmijn, 2012), education level (Silverstein et al., 2006), marital status (Silverstein et al., 2006), and religion (Myers, 2004) were found to be associated with intergenerational interactions, we included them as covariates in the study. We found that the main pattern of results remained unchanged after statistically controlling for these variables. The models are reported in Supplementary Materials. As the main results were similar regardless of whether we controlled for the covariates in the analysis, we report the results of the models with no covariates.

Results

On average, mothers ($M = 4.80$, $SD = 1.32$) provided more support to children than the reverse ($M = 4.51$, $SD = 1.16$) ($t = 2.01$, $p = 0.48$). Mothers and children reported a similar level of received support (Mothers: $M = 4.94$, $SD = 1.18$; Children: $M = 4.90$, $SD = 1.11$; $t = 0.24$, $p = .812$). Mothers and children reported a similar level of positive affect during the 14 days (Mothers: $M = 3.09$, $SD = 0.49$; Children: $M = 3.00$, $SD = 0.53$; $t = 1.54$, $p = .127$), but mothers reported a significant lower level of negative affect than did children (Mothers: $M = 1.74$, $SD = 0.64$; Children: $M = 1.88$, $SD = 0.47$; $t = -2.01$, $p = .048$).

Part 1: Was Daily Intergenerational Support Reciprocal?

Consistent with H1a and H1b, support received from the partner was associated with support offered to the partner on the same day. This effect was significant for both the mothers ($Estimate = 0.572$, $SE = 0.037$, $t = 15.421$, $p < .001$) and the children ($Estimate =$

0.521, $SE = 0.038$, $t = 13.574$, $p < .001$), and was not moderated by age (mothers: $Estimate = -0.003$, $SE = 0.003$, $t = -0.863$, $p = .391$; children: $Estimate = 0.006$, $SE = 0.004$, $t = 1.737$, $p = .087$). Table 2 shows detailed results.

Part 2: Was the Level of Being Under-Benefitted Associated with Positive and Negative Affect?

Daily Positive Affect. Partially consistent with H2a and H2c, a greater level of being under-benefitted was associated with a lower level of positive affect in the children ($Estimate = -0.036$, $SE = 0.018$, $t = -2.015$, $p < .05$) but not the mothers ($Estimate = -0.002$, $SE = 0.020$, $t = -0.098$, $p = .922$). These effects were not moderated by age (mothers: $Estimate = 0.003$, $SE = 0.002$, $t = 1.806$, $p = .075$; children: $Estimate = 0.001$, $SE = 0.002$, $t = 0.515$, $p = .608$).

Daily Negative Affect. Inconsistent with H2b and H2c, being under-benefitted to a greater extent was not associated with negative affect in either the children ($Estimate = 0.017$, $SE = 0.017$, $t = 1.017$, $p = .312$) or the mothers ($Estimate = -0.002$, $SE = 0.020$, $t = -0.098$, $p = .922$). The associations were not moderated by age (mothers: $Estimate = -0.004$, $SE = 0.002$, $t = -1.849$, $p = .069$; children: $Estimate = -0.003$, $SE = 0.002$, $t = -1.268$, $p = .209$). Table 3 shows detailed results.

Part 3: Were Support Offered and Support Received Associated with Positive and Negative Affect?

Daily Positive Affect. Offering more support to children was positively associated with the mothers' positive affect ($Estimate = 0.053$, $SE = 0.023$, $t = 2.332$, $p < .05$). This effect was greater for older mothers ($Estimate = 0.004$, $SE = 0.002$, $t = 2.112$, $p < .05$). However, offering more support to mothers was not associated with the children's positive affect ($Estimate = 0.027$, $SE = 0.021$, $t = 1.280$, $p = .205$), and the association was not moderated by the child's age ($Estimate = -0.0003$, $SE = 0.002$, $t = -0.151$, $p = .880$).

Support received from children was not associated with the mothers' positive affect ($Estimate = 0.0268, SE = 0.018, t = 1.518, p = .133$), and this association was not moderated by the mother's age ($Estimate = -0.003, SE = 0.002, t = -1.462, p = .148$). Support received from mothers was significantly positively associated with the children's positive affect ($Estimate = 0.067, SE = 0.020, t = 3.348, p < .001$). The latter effect was not moderated by the age of the child ($Estimate = -0.001, SE = 0.002, t = -0.525, p = .601$).

Daily Negative Affect. Neither providing support to children ($Estimate = -0.023, SE = 0.026, t = -0.897, p = .373$) nor receiving support from them ($Estimate = -0.030, SE = 0.214, t = -1.422, p = .159$) was significantly associated with the mothers' negative affect. Neither of these interactions were moderated by the age of the mother (offering support: $Estimate = -0.003, SE = 0.002, t = -1.287, p = .202$; receiving support: $Estimate = 0.003, SE = 0.002, t = -1.202, p = .233$).

However, receiving more support from mothers was significantly associated with lower levels of negative affect in the children ($Estimate = -0.050, SE = 0.022, t = -2.274, p < .05$). This effect was not moderated by the age of the child ($Estimate = 0.003, SE = 0.002, t = 1.097, p = .276$). Providing more support to mothers was not associated with greater levels of negative affect in the children ($Estimate = -0.011, SE = 0.023, t = -0.529, p = .599$). Again, this effect was not moderated by the age of the child ($Estimate = -0.002, SE = 0.025, t = -0.654, p = .515$). Table 4 shows detailed results.

Discussion and Implications

During life-threatening events, family support is important for maintaining well-being and achieving emotionally meaningful goals (Carstensen et al., 2003). However, little is known about how family support benefits well-being during crises, such as the COVID-19 pandemic. In addition, the existing studies on daily intergenerational relationship (Cichy et al., 2014; Fingerman et al., 2015; Savla et al., 2008) have collected the reports of only one

partner in the relationship, without seeking to analyze the interaction between the two relationship partners. With this study, we sought to fill in these gaps. By examining the daily interactions between mothers and their adult children based on responses provided by both partners, we were able to capture relatively small and even mundane details of these relationships to provide a more comprehensive picture of these interactions and their implications for daily life. The situation of COVID-19 allowed us to examine the role of intergenerational support on well-being in a naturalistic situation in which people were facing life-threatening events. In addition, the imposed lockdown situation minimized the effects of contextual confounders on individual and age differences in daily activities and interaction time.

Our findings support the hypothesis that both mothers and children provide more support to their partner when they receive more support. Family roles influenced the implications of reciprocity on well-being in that being under-benefited to a greater extent was negatively associated with daily positive affect in children, but not in mothers. Providing support and receiving support had distinct effects on the daily well-being of mothers and adult children. Specifically, mothers reported greater positive affect on the days when they provided more support to their children, whereas children reported more positive and less negative affect on the days when they received more support from their mothers.

According to the contingent exchange perspective (Davey & Eggebeen, 1998), providing support is more salient to mothers' well-being than receiving support, whereas receiving support is more salient to children's well-being. Unlike most previous studies on intergenerational support and well-being, which used global surveys, we did not find a significant relationship between receiving support and well-being in mothers or between providing support and well-being in children. This discrepancy in findings may be attributable to three reasons. First, our study was conducted during the COVID-19 pandemic.

Support from family members and support provided to family members may both be highly consistent with individuals' emotionally meaningful goals (Carstensen et al., 2003). As COVID-19 might have limited future time perspective and thus heightened emotionally meaningful goals (Carstensen et al., 2003) for both mothers and children, the mothers might not be discomforted by receiving daily support from their children. Similarly, children might not have felt that providing daily support to mothers was unpleasant. Second, Davey and Eggebeen (1998) suggested that mothers might find it particularly unpleasant to receive instrumental, but not emotional support. Exchanges of emotional support have been found to be more frequent than exchanges of instrumental support in general (Lang, & Schütze, 2002; Malecki & Demaray, 2003). This may be particularly the case during the lockdown period related to the COVID-19 pandemic. In addition, the child–mother pairs in this study were living together at the time of data collection because of the home quarantine order from the government. Although this situation had its own stress, it might have reduced stress from work-family conflicts and other sources. As a result, both the children and their parents may have had greater resources to draw from when providing support to each other, compared to the participants in previous studies. A longitudinal design that examines different types of intergenerational support (e.g., emotional support, instrumental support) provided before and after the COVID-19 pandemic from the viewpoints of both partners could help to clarify the discrepancy in findings.

Our findings have some practical implications. Older adults are generally considered more vulnerable during public health events (e.g., Yang et al., 2020). During this pandemic, researchers and practitioners recommended that older adults should be given more support as a form of protection. However, the findings of our study suggest that to promote better mental health during a crisis, older adults may be given some opportunities to support their family members, especially co-residing children. Policy makers and practitioners might

consider older adults themselves as a valuable resource in the work of promoting the health and well-being of older adults and of those who are supported by them.

Our study has some limitations. First, we recruited only mothers as parents, based on the assumption that they are the primary caregivers in most families. This restriction allowed us to better control the effects of family roles (Flouri & Buchanan, 2003) and gender roles (Barbee et al., 1993). However, it is equally important to understand the intergenerational support exchanged between fathers and children, and future studies should examine the daily interactions between aging fathers and their adult children. Second, because we hoped to begin the project soon after the outbreak of COVID-19, the sample size for this study was quite small. However, we tried to avoid the limitations imposed by the small sample on explanatory power by examining a small number of variables. Nevertheless, future studies should examine this research topic in a larger sample. We note that our sample also included more daughters than sons. A larger sample of children with a balanced gender ratio may be needed to replicate our findings. Third, to minimize the number of items participants needed to complete every day for 14 days, the measures we used were general. In particular, we used two items to capture emotional and instrumental support provided respectively, but used one general item to capture support received. Future studies should use more comprehensive measures in measuring different types of support. Fourth, reciprocity was mainly measured using two approaches in previous studies. The first approach was to directly ask participants to self-report their perceived reciprocity, e.g., “I get much more than I give” (e.g., Braun et al., 2018; Schwarz et al., 2005). The second approach was to use the difference score between support received and support provided to indicate the level of being over-/under-benefitted (Antonucci & Akiyama, 1987; Jou & Fukada, 2002; Jung, 1990; Klein Ikkink & van Tilburg, 1999; Li et al., 2011). Our study adopted the second approach; however, the first approach

may provide direct information about perceived reciprocity. Future studies should attempt to replicate the current findings using the first approach.

Fifth, the intergenerational solidarity theory (Bengtson & Roberts, 1991) specifies six distinct elements of parent–children interaction, namely affection, association, consensus, resource sharing, the strength of familism norms, and the opportunity structure for parent–children interaction (p. 856). Future studies may also examine parent–children interactions during public health crises and their implications on well-being in terms of these elements (Bengtson & Roberts, 1991). Sixth, although the collection of data during the COVID-19 pandemic is a strength of our study, it may also limit the generalizability of our findings. For instance, we did not find a consistent moderating effect of age. Due to the context of the study, it is unclear whether this indicates that family role is more salient than age in intergenerational interactions or that a more limited perception of future time drives individuals across the life span to place a higher value on emotional goals. Future studies are needed to address this question. Seventh, the mother–child pairs who participated in our study lived together during the lockdown associated with the COVID-19 pandemic. However, we do not know whether they are in a caregiving relationship. Future studies should consider such information. Seventh, we did not include a measure of long-term reciprocity because of time constraints. However, the influence of short-term reciprocity during the COVID-19 pandemic on long-term reciprocity in the parent–child relationship may be an important topic in future studies. Eighth, we did not examine whether the associations between providing/receiving support and well-being were moderated by family values, such as filial piety or parental obligation (Fingerman, Miller, Birditt, & Zarit, 2009). An understanding of these potential moderators is important for future studies seeking to promote well-being in intergenerational interactions. Ninth, we acknowledge that some adult child participants were of similar age as some mother participants (around 44 years old) in

our study. This group of participants may have more complex roles in intergenerational interactions. For instance, some participants might be a mother of an adult child and a daughter of an aging mother at the same time. Few studies have examined whether and how having multiple roles in intergenerational interaction may be associated with well-being. This interesting and potentially important question should be addressed in future studies.

In summary, we examined daily intergenerational support between mothers and their adult children during the COVID-19 outbreak. Our findings confirmed that there was daily reciprocity in child–parent support. We have advanced the literature by finding that providing support, but not receiving support, was associated with the daily well-being of the mothers, whereas receiving support, but not providing support, was associated with the daily well-being of the children. This study thus provides important information about daily intergenerational support during a global public health emergency. The findings shed light on the importance of daily reciprocity and its implications for well-being.

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Table 1.

Descriptive Information for Mothers (N = 77) and Their Children (N = 77)

	Mothers		Children		<i>t</i>	<i>p</i>
	Mean/Percentages	SD	Mean/Percentages	SD		
Age	53.78	9.57	26.61	9.46	69.87	.000
General Health (1 = <i>very poor</i> , 6 = <i>perfect</i>)	2.94	0.88	3.52	0.74	-5.84	.000
Subjective Socioeconomic Status	6.21	1.90	6.31	1.42	-0.46	.647
Received Support	4.94	1.18	4.90	1.11	0.24	.812
Provided Support	4.80	1.32	4.51	1.16	2.01	.048
Reciprocity	0.61	0.52	0.71	0.55	-1.22	.228
Daily Health	2.65	0.76	2.44	0.73	2.40	.019
Daily Positive Affect	3.09	0.49	3.00	0.53	1.54	.127
Daily Negative Affect	1.74	0.64	1.88	0.47	-2.01	.048
Interaction Hours	13.90	8.41	13.99	8.39	0.13	.896
Sex (<i>female</i> %)	100		80.5			

Job status (<i>had a full-time job %</i>)	50.6	18.2
Education (<i>college and above%</i>)	50.6	94.8
Marital Status (<i>married %</i>)	89.6	16.9
Religion (<i>has a religion %</i>)	27.3	10.4

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Table 2.

Hierarchical Linear Analysis Testing Whether the Daily Received Support Was Associated with Daily Provided Support on the Concurrent Day (Day N), and the Moderating Role of Age.

	Provided Support on Day N
<hr/>	
Level 1	
Children's Received Support	B = 0.521, SE = 0.038, p = .000
Mothers' Received Support	B = 0.572, SE = 0.037, p = .000
Level 2	
Children's Age	B = -0.008, SE = 0.013, p = .568
Mothers' Age	B = 0.013, SE = 0.016, p = .412
L1 x L2 Interaction	
Children's Received Support x Children's Age	B = 0.006, SE = 0.004, p = .087
Mothers' Received Support x Mothers Age	B = -0.003, SE = 0.003, p = .391

Note. N for level 1 variables is 1038, and N for level 2 variables is 77.

Table 3.

Hierarchical Linear Analysis Testing Whether the Level of Being Under-Benefitted Was Associated with Daily Well-being on the Concurrent Day (Day N), and the Moderating Role of Age.

	Positive Affect on Day N	Negative Affect on Day N
Level 1		
Children's Reciprocity	B = -0.036, SE = 0.018, p = .048	B = 0.017, SE = 0.017, p = .312
Mothers' Reciprocity	B = -0.002, SE = 0.020, p = .922	B = 0.018, SE = 0.020, p = .367
Level 2		
Children's Age	B = 0.004, SE = 0.007, p = .534	B = -0.007, SE = 0.006, p = .244
Mothers' Age	B = -0.001, SE = 0.006, p = .856	B = 0.005, SE = 0.007, p = .471
L1 x L2 Interaction		
Children's Reciprocity x Children's Age	B = -0.036, SE = 0.018, p = .608	B = -0.003, SE = 0.002, p = .209
Mothers' Reciprocity x Mothers' Age	B = 0.003, SE = 0.002, p = .075	B = -0.004, SE = 0.002, p = .069

Note. N for level 1 variables is 1038, and N for level 2 variables is 77.

Table 4.

Hierarchical Linear Analysis Testing Whether the Daily Provided Support and Received Support Were Associated with Daily Well-being on the Concurrent Day (Day N), and the Moderating Role of Age.

	Positive Affect on Day N	Negative Affect on Day N
Level 1		
Children's Provided Support	B = 0.027, SE = 0.021, <i>p</i> = .205	B = -0.012, SE = 0.023, <i>p</i> = .599
Children's Received Support	B = 0.067, SE = 0.020, <i>p</i> = .001	B = -0.050, SE = 0.022, <i>p</i> = .026
Mothers' Provided Support	B = 0.053, SE = 0.023, <i>p</i> = .023	B = -0.023, SE = 0.026, <i>p</i> = .373
Mother's Received Support	B = 0.028, SE = 0.018, <i>p</i> = .133	B = -0.030, SE = 0.021, <i>p</i> = .159
Level 2		
Children's Age	B = 0.015, SE = 0.011, <i>p</i> = .158	B = -0.011, SE = 0.010, <i>p</i> = .252
Mothers' Age	B = -0.009, SE = 0.008, <i>p</i> = .283	B = 0.007, SE = 0.011, <i>p</i> = .491
L1 x L2 Interaction		
Children's Provided Support x Children's Age	B = -0.0003, SE = 0.002, <i>p</i> = .880	B = -0.002, SE = 0.003, <i>p</i> = .515
Children's Received Support x Children's Age	B = -0.001, SE = 0.002, <i>p</i>	B = 0.003, SE = 0.002, <i>p</i> = .276

Children's Age	= .601		
Mothers' Provided Support x	B = 0.004, SE = 0.002, <i>p</i>		B = -0.003, SE = 0.002, <i>p</i>
Children's Age	= .038		= .202
Mothers' Received Support x	B = -0.003, SE = 0.002, <i>p</i>		B = 0.003, SE = 0.002, <i>p</i> = .233
Children's Age	= .148		

Note. *N* for level 1 variables is 1038, and *N* for level 2 variables is 77.

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Conflict of Interest Statement

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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